

AMENDMENTS TO THE CLAIMS

1. (Withdrawn) A metal part and other surface modification and cleaning method, in which the part to be treated is placed within Vessel No. 1 which is filled with a fluid, which flows in Vessel No. 1 located at a distance from the surface of said part and flows from Vessel No. 1, with this fluid's flow rates controlled to pressurize Vessel No. 1 to increase the collapsing impact force of the cavitation bubble, which is in turn used to apply a peening effect to the surface of the part to strengthen and clean the surface of the treated part.

2. (currently amended) A metal part and other surface modification and cleaning method, ~~in which the part to be treated is placed~~ comprising the steps of placing the part within a first vessel, ~~which is wherein the first vessel is filled with a first fluid, and placing said first vessel is placed within a second vessel, which is wherein the second vessel is filled with a second fluid, to generate~~ generating cavitation by injecting pressurized first fluid from a nozzle separated from said part surface in said first vessel so that the collapsing impact force of bubbles formed from the cavitation ~~bubble may be used to~~ strengthen and clean the surface of the treated part by applying a peening effect to the surface of the part; and further comprising the step of inserting a substance with a different acoustic impedance is inserted between said first and second vessels.

3. (currently amended) ~~A~~The metal part and other surface modification and cleaning method according to Claim 2 ~~above, in which the first vessel is pressurized by~~ further comprising the step of controlling ~~the~~an input flow rate of the first fluid into the first vessel and an output flow rate of the first fluid from the first vessel to pressurize the first vessel, wherein ~~rates of both fluids flowing in and out of said first vessel~~ ~~1 to increase~~ the collapsing impact force of the cavitation bubbles is increased and ~~to strengthen and clean~~strengthens and cleans the treated part by applying a peening effect under such impact force.

4. (canceled)

5. (currently amended) ~~A~~The metal part and other surface modification and cleaning method according to Claim 2, further comprising the step of controlling the temperature of the first ~~in which the~~ fluid in said first vessel ~~has its temperature controlled by~~ controlling the temperature of the second fluid that fills the space between said first and second vessels.

6. (Withdrawn) A metal part and other surface modification and cleaning method according to Claim 1, in which the cavitating jet to be injected into Vessel No. 1 is sent to the cooling means from Vessel No. 1 and returned to a cavitating jet pump after cooled in said cooling means.

7. (Withdrawn, Currently amended) A metal part and other surface modification device ~~composed of Vessel No. 1 capable of accommodating~~ comprising: a first vessel, said first vessel having an opening that receives the part ~~to be treated~~, and a first fluid; a lid, said lid being hermetically sealable enclosing ~~Vessel No. 1~~, the first vessel and pressurizing the first fluid; ~~Vessel No. 2 capable of accommodating said Vessel No. 1~~, a second vessel, said second vessel having an opening that receives the first vessel and a second fluid; a nozzle ~~to inject~~ that injects pressurized first fluid into the first pressurized fluid, fluid contained in the first vessel; a flow rate control valve ~~to control the~~ that controls jet pressure from said nozzle; ~~and a pressure control valve to control~~ that controls the fluid pressure in ~~Vessel No. 1~~ the first vessel; and a substance with a different acoustic impedance between said first and second vessels.

8. (Withdrawn) A metal part and other surface reforming device according to Claim 7 above, in which two or more said nozzles are provided.

9. (Withdrawn, Currently amended) A metal part and other surface modification device according to Claim 7, ~~in which said Vessel No. 2 is configured to have~~ wherein said second vessel has a larger depth than the height of ~~Vessel No. 1~~ the first vessel.

10. (canceled)

11. (Withdrawn, Currently amended) A metal part and other surface modification device according to Claim 7, ~~in which~~ wherein the lid on said Vessel No. 1 first vessel is closed with a ~~specified~~ predetermined force.

12. (Withdrawn, Currently amended) A metal part and other surface modification device according to Claim 7, ~~in which~~ further comprising a means of heating or cooling the second fluid in said Vessel No. 2 ~~is provided~~ second vessel.

13. (Withdrawn, Currently amended) A metal part and other surface modification device according to Claim 7, ~~in which said part to be treated is loaded on~~ further comprising a carriage means ~~to carry such~~ that carries said part to be treated.

14. (Withdrawn) A metal part and other surface modification and cleaning method, in which Vessel No. 1, which is filled with a fluid, is placed on the part to be treated and the fluid is flowed into said Vessel No. 1 to pressurize Vessel No. 1 in the interior, with the collapsing impact force of the cavitation bubble increased by injecting the pressurized fluid to generate cavitation in said Vessel No. 1 so pressurized so that said impact force may be used to treat, strengthen and clean the surface of the part by applying a peening effect to the part.

15. (Withdrawn) A metal part and other surface modification and cleaning method, in which the part to be treated is placed within Vessel No. 1 which is filled with a fluid, which is in turn flowed into said Vessel No. 1 to pressurize Vessel No. 1 in the interior, with the collapsing impact force of the cavitation bubble increased by injecting the pressurized fluid to generate cavitation in said Vessel No. 1 so pressurized so that said impact force may be used to treat, strengthen and clean the surface of the part by applying a peening effect to the part.

16. (Withdrawn) A metal part and other surface modification and cleaning device equipped with Vessel No. 1 placed on the part to be treated, with a nozzle to inject a pressurized fluid into Vessel No. 1, and with a nozzle to inject

a cavitating jet into the pressurized fluid in Vessel No. 1 to strengthen and clean the surface of the part to be treated by applying a peening effect to the surface of the part under the collapsing impact force of the cavitation foam.

17. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 16 above, in which such device is an integral part of said Vessel No. 1, a nozzle to pour a pressurized fluid into Vessel No. 1, a nozzle to inject a cavitating jet into the pressurized fluid in Vessel No. 1.

18. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 16, in which such device is so configured as to control the pressure of the fluid in said Vessel No. 1 by such a fluid pressure regulator means as a valve or the like.

19. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 16, in which said part to be treated is immersed in the fluid in Vessel No. 2.

20. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 19 above, in which said part to be treated is placed above the surface of the fluid filled in Vessel No. 2.

21. (Withdrawn, Currently amended) A metal part and other surface modification and cleaning device according to Claim 7, ~~in which further comprising a means of cooling the cavitating jet first fluid to be poured into Vessel No. 1 is provided.~~

22. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 16, in which a pressurized fluid is poured into said Vessel No. 1 as if it surrounded the cavitating jet fluid.

23. (Withdrawn) A metal part and other surface modification and cleaning method, in which the part to be treated, such a pipe-shaped part or conduit and the like, has a fluid-pressurizing chamber formed within the pipe or conduit to inject a cavitating jet into such pressurized fluid and to increase the

collapsing impact force of the cavitation bubble so that the internal surface of the pipe may be strengthened and cleaned by using such impact force to apply a peening effect to the internal surface of the pipe.

24. (Withdrawn) A metal part and other surface modification and cleaning device equipped with Members Nos. 1 and 2 to form a fluid-pressurizing chamber in a pipe or conduit, with a nozzle to pour a pressurized fluid between said Members Nos. 1 and 2, and with a nozzle to inject a cavitating jet into said fluid pressurizing chamber, to strengthen and clean the surface of the treated part by using the collapsing impact force of the cavitation foam to apply a peening effect to the surface of the part.

25. (Withdrawn) A metal part and other surface modification and cleaning device according to Claim 24 above, in which either Member No. 1 or No. 2 is provided with a fluid pressure regulator means to regulate the fluid pressure in the fluid-pressurizing chamber.